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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/607,729

06/27/2003

Valentine J. Rhodes

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6499

59796

7590

09/26/2007

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EXAMINER

QURESHI, AFSAR M

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

09/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/607,729	<b>Applicant(s)</b> RHODES, VALENTINE J.	
	<b>Examiner</b> Afsar M. Qureshi	<b>Art Unit</b> 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

A Q

***Response to Amendment***

1. This action is responsive to amendments/Arguments received on 7/20/2007.  
Claim 9 cancelled, claims 1-8, 10-20 remain in the pending application.

***Response to Arguments***

2. In light of amendments to claims 1, 11 and 17 (independent claims), rejection under 35 USC 112, 2<sup>nd</sup> paragraph, is withdrawn.

Applicant argued that that amended subject matter (claims 1, 11 and 17) wherein *the selected subcarrier is punctured prior to transmission by placing no information in the selected subcarrier and transmitted power is re-allocated to information carrying subcarriers* is not disclosed by the cited prior art, Chini et al. (US 2002/0191533).

Chini recognizes the fading carriers and put them in “unreliable” category with “non –data bearing” state. However, the unreliability of these carriers varies over time, they are periodically monitored through modulation and can be used as, for example, pilot tones for channel estimation (see [0004]).

New rejection follows.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chini et al. (us 2002/0191533) in view of Ketchum (US 2003/0072379).

As to claims 1-4, 11 and 17, Chini discloses a multicarrier communication system comprising a transmitter 500 (fig. 5) having channel knowledge wherein transmitter and receiver determine the channel knowledge. Transmitter by sending a channel information request to the receiver 550 (fig. 5) to characterize all carriers associated with the channel link and receiver analyzes the received signal and characterizes the data placed on each carrier, transmitter receives an out put of the *carrier map* indicating the channel knowledge of communication link to puncture (deleting code symbols periodically from the sequence for purpose of constructing a higher rate code and deleting parity bits (see [0041], [0029] and [0030])). As to claim 17, Chini further discloses a processing unit 400 coupled to receiver and a memory 410 which can also function as a form of SRAM (it caches data traveling between two MCM systems) (see [0025] and fig. 4). As to claim 2, the transmitter, disclosed by Chini, is an OFDM transmitter (see [0029]).

As to claims 5-10, 12-16 and 18-20 as discussed in the rejection of claim 1 above, Chini is concerned with multi-path fading, interference in the same field of endeavor as the current invention, and obtains channel knowledge from these activities and devices

therein (see [0003]-[0007]). Chini further discloses puncturing the carrier by placing energy without including data wherein in other subcarriers do not require placing energy that are in reliable state. Chini also discloses that the energy is also placed into the punctured subcarrier to reduce peak to average power ratio (see {0004}, [0006] and [0021] and figs. 1-2).

As to amended claims 1, 11 and 17, Chini discloses identifying unreliable carriers. However, Chini fails to specifically disclose that the unreliable carriers, or the carriers that suffer from channel impairments from a plurality of carriers are punctured prior to transmission by placing no information in the selected carriers and transmitted power is re-allocated to information carrying carriers (subcarriers).

Ketchum discloses a method and apparatus for determining power allocation and one of the techniques is to use fixed base code to encode data and the coded bits for each transmission channel are then punctured prior to transmission (i.e., selectively deleted). Power is re-allocated to different channels carrying information (see [0018]).

Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to be able to utilize coding techniques and selectively deleting subcarriers that suffer from link conditions such as fading in order to effectively and efficiently allocating power to different channels.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afsar M. Qureshi whose telephone number is (571) 272 3178. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Field Lynn can be reached on (571) 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**AFSAR QURESHI**  
**PRIMARY EXAMINER**

9/21/2007